UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,201	05/03/2001	Richard John Moore	GB920000064US1	6511

7590   02/02/2004

William A. Kinnaman, Jr.
IBM Corporation
Intellectual Property Law Department
2455 South Road, M/S P386
Poughkeepsie, NY 12601-5400

EXAMINER
CAO, DIEM K

ART UNIT	PAPER NUMBER
2126	3

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)
Office Action Summary	09/848,201		MOORE, RICHARD JOHN
	Examiner		Art Unit
	Diem K Cao		2126

-- Th MAILING DATE of this communication app ars on th cov r sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>03 May 2001</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-4,6-8 and 11-14</u> is/are rejected.

7)☒ Claim(s) <u>5, and 9-10</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   This Office action is in response to the Application filed on 05/03/2001.

2.   Claims 1-14 are presented for examination.

Allowable Subject Matter

3.   Claims 5 and 9-10 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

4.   Claims 7-8 would be allowable if rewritten to overcome the rejection(s) under 35

U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations

of the base claim and any intervening claims.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

6.   Claims 7-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

       Claim 7 claims "wherein the activation module runs as a daemon so maintaining said

interception module in virtual memory", it is unclear whether the activation module refers to the

first instance or the second instance. Examiner interprets the second instance runs as a daemon in

according to the specification (page 10, lines 1-16) for the rejection purpose.

Correction is required.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

8.   Claims 1-2, 6, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Deianov et al. (U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1).

9.   **As to claim 1**, Deianov teaches an activation module (an interception module, a modified

loader program; col. 3, lines 35-54), an interception module (a system call wrapper; an

initialization module; col. 3, lines 47-54), the activation module being adapted to load the

interception module (the modified loader loads an initialization module and a system call

wrapper; col. 3, lines 47-54), the activation module being adapted to redirect the one or more

API calls by creating an alias to any page containing an entry point for an API call to be

intercepted and to write the address of the interception module to the alias (Pointers 114 to

system calls 115 are located in an operating system interrupt vector table 113 ... to the

interception module 111 to execute the interception module 111; col. 6, lines 5-38), the

activation module being adapted to provide to any instances of the interception module the

original entry points for the one or more API calls (the interception module 111 first writes, to

the return address area 129 of the system call wrapper 125, the address to which to return

execution after the system call wrapper 125 terminates; col. 8, line 56 – col. 9, line 13), and the

interception module being adapted to selectively provide modified functionality for the

intercepted API calls (When a call is made ... not all system calls 115 need be intercepted; col. 6,

lines 35-40 and alternative object code to be executed instead of the system call ... system call

wrapper; col. 1, line 64 – col. 2, line 2).

10.   However, Deianov does not teach loading the interception module to occupy a location in

a shared region of virtual memory as long as interception of the API calls is required. Hammond

teaches loading the interception module to occupy a location in a shared region of virtual

memory as long as interception of the API calls is required (an injection dynamic link library

called INJECT.DLL is loaded from the injection application into a second pre-determined

memory location within an area of shared memory; col. 8, lines 36-67).

11.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teaching of Hammond and Deianov because Hammond teaching o

loading the interception module would improve the flexibility of Deianov's system by

dynamically injecting the execution logic into a shared memory space of a window operating

system (col. 2, lines 56-58)

12.   **As to claim 2**, Deianov does not explicitly teach the activation module is adapted to load

the interception module at system initialization time. Hammond teaches the activation is adapted

to load the interception module at system initialization time (an injection application is started

with a kernel application ... for the windowed operating system; col. 5, lines 46-58).

13.   **As to claim 6**, Deianov teaches the interception module is adapted to export one or more

global variables located in its code segment to the activation module (The initialization module

123 ... select process 107; col. 7, lines 5-29), each global variable corresponding to an API call

to be intercepted (the entry point in the system call wrapper; col. 7, lines 5-29), the activation

module being adapted to create an alias to any page containing one of the one or more global

variables to write the original entry point of the one or more API calls to the respective aliases

(Pointers 114 to system calls 115 are located in an operating system interrupt vector table 113 ...

to the interception module 111 to execute the interception module 111; col. 6, lines 5-38).

14.   **As to claim 12**, Deianov does not explicitly teach one or more API calls to be intercepted

is a call for allocating memory, however, Deianov teaches a system call performs some system

operations, such as the access of a system hardware or software (col. 1, lines 31-44). It would

have been obvious the call for allocating memory could also be intercepted.

15.   **As to claim 14**, Deianov teaches computer program code stored on a computer readable

storage medium for intercepting API calls when executed on a virtual memory computer system,

the program code comprising the system of claim 1 (A computer memory 101 ... into the

operating system 117; col. 5, lines 50-66).

16.   Claims 3-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Deianov et al. (U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1) further in view of

Pietrek (Learn System-Level Win32 Coding Techniques by Writing an API Spy Program).

17.   **As to claim 3,** Deianov teaches the activation module is adapted to read a configuration

file (a list of selected processes ... of a default loader program; col. 8, lines 1-11).

18.   However, Deianov does not teach the configuration file containing data defining the API

calls to be intercepted and the manner in which the API calls are to be modified, the activation

module being adapted to write the configuration data to an area of shared memory and to

provides to all instances of the interception module the location of the shared memory. Pietrek

teaches the configuration file containing data defining the API calls to be intercepted (the spy

DLL reads an input file ... about the function's parameters; page 8), the activation module being

adapted to write the configuration data to an area of memory (the code portion of the stub ... on

the stack; page 8), and to provides to all instances of the interception module the location of the

shared memory (As the spy DLL builds each stub ... the import section; page 9).

19.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teaching of Pietrek and Deianov because Pietrek teaches a method to

monitor multiple applications by creating an extensible list of functions to be intercepted and no modification to the programs (page 1).

20.   **As to claim 4,** Deianov does not teach an instance of the interception module is responsive to receiving a redirected API call to load itself within the process making the API call so that a segment of global data is made available to each instance of the interception module.

21.   Pietrek teaches an instance of the interception module is responsive to receiving a redirected API call to load itself within the process making the API call so that a segment of global data is made available to each instance of the interception module (By freezing the target process ... code for the program; pages 5-6).

22.   It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Deianov and Pietrek because Pietrek teaches sharing data to multiple instances of the interception module would improve the performance by reducing the memory usage.

23.   **As to claim 11,** Deianov does not teach the interception module is adapted to check that it is not being called recursively prior to loading itself. However, Deianov teaches recursively execute the wrapper is avoided by check on the flag (col. 7, lines 29-40 and col. 8, lines 44-55). It would have been obvious to one of ordinary skill in the art to have included checking of

recursively called the Deianov's system because it provides a method not to load multiple

instance of the same code into the process address space.

24.   Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deianov et al.

(U.S. 6,529,985 B1) in view of Hammond (U.S. 6,463,583 B1) further in view of Admitted Prior

Art (APA).

25.   **As to claim 13**, Deianov does not teach the activation module and the interception

module are adapted to operate on OS/2 Warp Version 3 SMP and Warp Version 4.5 operating

systems. Deianov teaches the activation module and the interception module are adapted to

operate on the multitasking system (col. 1, lines 8-11). APA teaches OS/2 Wrap Version 3 SMP

and Warp Version 4.5 operating system for used by 32-bit applications (page 2, lines 18-25). It

would have been obvious to apply the teaching of APA to the system of Deianov because it

provides a method to run the application in different operating systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Diem K Cao whose telephone number is (703) 305-5220. The

examiner can normally be reached on Monday - Thursday, 9:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Diem Cao

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100